

***IN THE UNITED STATES PATENT AND TRADEMARK OFFICE***

**APPLICANTS:** Mayes *et al.*  
**SERIAL NUMBER:** Not yet assigned      **ART UNIT:** Not yet assigned  
**FILING DATE:** Herewith      **EXAMINER:** Not yet assigned  
**TITLE:** MAGNETIZABLE DEVICE

**Mail Stop PATENT APPLICATION**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Particulars of Prior Applications:**

Serial No. 09/308,166	Serial No.: 09/730,117
Filed: June 25, 1999	Filed: December 5, 2000
Group No.: 1773	Group No.: 1773
Examiner: Steven A. Resan	Examiner: Steven A. Resan

**INFORMATION DISCLOSURE STATEMENT**

Sir:

In accordance with the provisions of 37 C.F.R. 1.97 and 1.98, Applicants hereby make of record the patents and publications listed on the accompanying Form PTO-1449, and other information contained herein, for consideration by the Examiner in connection with the examination of the above-identified patent application. Pursuant to 37 C.F.R. § 1.98 (d), patents and publications listed on the accompanying Form PTO-1449 were previously cited and made of record in prior applications, United States Serial Nos. 09/730,117 and 09/308,166, which are relied upon by the present application for an earlier effective filing date under 35 U.S.C. § 120. Accordingly, copies of the references are not enclosed.

**REMARKS**

In accordance with the provisions of 37 C.F.R. 1.97, this statement is being filed within three (3) months of the **filing date** of a national application other than a continued prosecution application under 37 C.F.R. 1.53(d), or within three (3) months of the **date of entry of the national stage** as set forth in 37 C.F.R. 1.491 in an international application, or before the mailing of the **first Office action** on the merits, or before the mailing of a **first Office action** after the filing of a request for continued examination under 37 C.F.R. 1.114.

It is respectfully requested that each of the patents and publications listed on the attached Form PTO-1449, and other information contained herein, be made of record in this application.

Date: February 19, 2004  
Reg. No. 50,773

Tel. No.: (617) 248-7453  
Fax No.: (617) 248-7100

3017099

Respectfully submitted,



---

Mark L. Beloborodov  
Attorney for Applicants  
Testa, Hurwitz, & Thibault, LLP  
High Street Tower  
125 High Street  
Boston, Massachusetts 02110

## EXPRESS MAIL MAILING LABEL NO. EV334229351US

FORM PTO - 1449				ATTORNEY DOCKET NO.: NNM-001C2			
INFORMATION DISCLOSURE STATEMENT				APPLICANTS: Mayes <i>et al.</i>			
				SERIAL NO.: Not yet assigned			
				FILING DATE: Herewith			
U.S. PATENT DOCUMENTS							
EXAM. INIT.		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	A1	3,951,904	04/20/76	Tomonaga			
	A2	3,966,510	06/29/76	Aonuma <i>et al.</i>			
	A3	3,975,569	08/1976	Sugimatsu <i>et al.</i>			
	A4	4,009,111	02/22/77	Tamai <i>et al.</i>			
	A5	4,096,040	06/20/78	Grosko			
	A6	4,214,893	07/1980	Tsuganezawa <i>et al.</i>			
	A7	4,269,826	05/26/81	Zimmermann <i>et al.</i>			
	A8	4,425,261	01/10/84	Stenius <i>et al.</i>			
	A9	4,452,773	06/05/84	Molday			
	A10	4,452,896	06/1984	Blakemore <i>et al.</i>			
	A11	4,454,234	06/12/84	Czerlinski			
	A12	4,480,256	10/30/84	Wren			
	A13	4,533,582	08/1985	DePalma <i>et al.</i>			
	A14	4,666,773	05/1987	Kitamoto <i>et al.</i>			
	A15	4,672,040	06/09/87	Josephson			
	A16	4,735,796	04/05/88	Gordon			
	A17	4,778,671	10/18/88	Wusirika			
	A18	4,814,098	03/21/89	Inada <i>et al.</i>			
	A19	4,849,210	07/18/89	Widder			
	A20	5,043,101	08/27/91	Gordon			
	A21	5,062,991	11/05/91	Siiman <i>et al.</i>			
	A22	5,069,216	12/03/91	Groman <i>et al.</i>			
	A23	5,147,841	09/15/92	Wilcoxon			
	A24	5,217,804	06/1993	James <i>et al.</i>			

EXAMINER

DATE CONSIDERED

<b>FORM PTO - 1449</b>				<b>ATTORNEY DOCKET NO.: NNM-001C2</b>			
<b>INFORMATION DISCLOSURE STATEMENT</b>				APPLICANTS: Mayes <i>et al.</i> SERIAL NO.: Not yet assigned FILING DATE: Herewith			
	A25	5,248,589	09/28/93	Bose <i>et al.</i>			
	A26	5,262,176	11/16/93	Palmacci <i>et al.</i>			
	A27	5,304,382	04/19/94	Monzyk			
	A28	5,328,681	07/12/94	Kito <i>et al.</i>			
	A29	5,338,617	08/16/94	Workinger <i>et al.</i>			
	A30	5,358,722	10/25/94	Monzyk			
	A31	5,437,892	08/01/95	Nagayama <i>et al.</i>			
	A32	5,443,813	08/22/95	Hainfeld			
	A33	5,487,954	01/1996	Chin <i>et al.</i>			
	A34	5,491,219	02/13/96	Mann			
	A35	5,505,996	04/09/96	Nagayama			
	A36	5,512,332	04/30/96	Liberti <i>et al.</i>			
	A37	5,543,226	08/06/96	Bobrich <i>et al.</i>			
	A38	5,547,748	08/20/96	Ruoff <i>et al.</i>			
	A39	5,552,072	09/03/96	Arase <i>et al.</i>			
	A40	5,552,229	09/03/96	Brodt <i>et al.</i>			
	A41	5,697,902	12/16/97	Goldenberg			
	A42	5,574,961	11-12-96	Edelstein <i>et al.</i>			
	A43	5,690,903	11-25-97	Hainfeld			
	A44	5,766,764	06-16-98	Olli <i>et al.</i>			
	A45	5,843,569	12-01-98	Kaitsu <i>et al.</i>			
	A46	5,916,539	06/29/99	Pilgrimm			
	A47	5,965,267	10/1999	Nolan <i>et al.</i>			
	A48	6,054,495	04/25/00	Markowitz <i>et al.</i>			
	A49	6,103,868	08/15/00	Heath <i>et al.</i>			
	A50	6,162,532	12-19-00	Black <i>et al.</i>			
	A51	6,180,389 B1	11/30/01	Douglas			
	A52	6,254,662 B1	07/03/01	Murray <i>et al.</i>			
<b>EXAMINER</b>				<b>DATE CONSIDERED</b>			

<b>FORM PTO - 1449</b>					<b>ATTORNEY DOCKET NO.: NNM-001C2</b>				
<b>INFORMATION DISCLOSURE STATEMENT</b>					APPLICANTS: Mayes <i>et al.</i> SERIAL NO.: Not yet assigned FILING DATE: Herewith				
	A53	6,262,129 B1	07/17/01	Murray <i>et al.</i>					
<b>FOREIGN PATENT DOCUMENTS</b>									
EXAM. INIT.		DOCUMENT NUMBER	DATE	COUNTRY CODE	CLASS	SUB CLASS	FILING DATE	ABSTRACT ONLY	ENGLISH LANG (Y/N)
	B1	42 44 354 A1	07/01/93	DE					Y
	B2	0 049 770	04/21/82	EP					Y
	B3	0 525 199	02/03/93	EP					Y
	B4	0 586 052 B1	07/05/97	EP					Y
	B5	0 686 448 a2	12/13/95	EP					Y
	B6	0 884 739 A1	12/16/98	EP					Y
	B7	0 977 182 A2	02/02/00	EP					Y
	B8	1 186 659 A1	03/13/02	EP					Y
	B9	88/00060 A1	01/14/88	WO					Y
	B10	89/11154	11/16/89	WO					Y
	B11	93/05818 A1	04/01/93	WO					Y
	B12	98/29535	07/09/98	WO					Y
	B13	99/46782 A2	09/16/99	WO					Y
	B14	00/45171	08/06/00	WO					Y
	B15	00/71169 A2	11/30/00	WO					Y
	B16	01/74406 A2	10/11/01	WO					Y
<b>OTHER ART, JOURNAL ARTICLES, ETC.</b>									
EXAM. INIT.	<b>OTHER DOCUMENTS: (Including Author, Title, Date, Relevant Pages, Place of Publication)</b>								
	C1	Bidan <i>et al.</i> "New Nanocomposites Based on Tailor Dressed Magnetic Particles in a Poypyrrole Matrix" Advanced Materials, VCH Verlagsgesellschaft, Weinheim, Germany Vol. 6, No. 2, pgs. 152-155 (Feb. 1, 1994).							
	C2	Calvert <i>et al.</i> , "Biomimetic Mineralization in and on Polymers" Chem. Mater. (1996), 8, pp. 1715-1727.							
	C3	Dickson <i>et al.</i> , "Properties of Magnetoferritin: A Novel Biomagnetic Nanoparticle, 3 <sup>rd</sup> International Conference on Nanostructured Materials, Kona HI, 8-12 July 1996, Nanostructured Materials, Vol. 9, pp. 595-598.							
<b>EXAMINER</b>					<b>DATE CONSIDERED</b>				

<b>FORM PTO - 1449</b>		<b>ATTORNEY DOCKET NO.:</b> NNM-001C2
<b>INFORMATION DISCLOSURE STATEMENT</b>		<b>APPLICANTS:</b> Maycs <i>et al.</i>
		<b>SERIAL NO.:</b> Not yet assigned
		<b>FILING DATE:</b> Herewith
	C4	Ford <i>et al.</i> , "Ferritin: Design and Formation of an Iron-Storage Molecule," Phil. Trans. R. Soc. Lond. Vol. B304, No. 1121, 2/13/84, pgs. 551-565.
	C5	Gider <i>et al.</i> "Classical and Quantum Magnetism in Synthetic Ferritin Proteins" Journal of Applied Physics, American Institute of Physics, New York, Vol. 79, No. 8, pgs. 5324-5326 (April 15, 1996)
	C6	Harris "The Production of Paracrystalline Two-Dimensional Monolayers of Purified Protein Molecules," Micron, Pergamon Press Ltd., United Kingdom, Vol. 13, No. 2, pgs. 147-168 (1982).
	C7	Huang <i>et al.</i> , Construction of a Ferritin Reactor: An Efficient Means for Trapping Various Heavy Metal Ions in Flowing Seawater", Journal of Protein Chemistry, Vol. 19, No. 6, 2000.
	C8	Hong J. <i>et al.</i> , "Granular Magnetic Cobalt Metal/Polymer Thin Film System," IEEE Transactions on Magnetics, Vol.32, No. 5, pgs. 4475-4477.
	C9	Kenji <i>et al.</i> , "Nanometer-Size Structures Fabricated by Bio-Nano-Process", Abstract, Meiji University.
	C10	Li <i>et al.</i> , "Growth of Single-Walled Carbon Nanotubes From Discrete Catalytic Nanoparticles of Various Sizes", J. Phys. Chem. B, 105, pp. 11424-11431, 2001.
	C11	Matsunaga "Synthesis of Nano-Scale Ultrafine Particles Using Biomolecules," Kagaku (Kyoto), Vol 46, ISS. 7, pg. 498 (1991).
	C12	Meldrum <i>et al.</i> "Synthesis of Inorganic Nanophase Materials in Supramolecular Protein Cages, " Nature, vol. 349, No. 21 (Feb. 1991).
	C13	Meldrum <i>et al.</i> , "Magnetoferritin: In Vitro Synthesis of a Novel Magnetic Protein", Science, Vol. 257, July 24, 1992, pgs. 522-523.
	C14	Meldrum, "Nanoscale Synthesis in Organized Assemblies (Ferritin, Electron Transfer, Magnetotactic Bacteria)," University of Bath (United Kingdom) (1992).
	C15	Moskowitz, <i>et al.</i> "Determination of the Preexponential Frequency Factor for Superparamagnetic Maghemite Particles in Magnetoferritin," J. Geophys. Res., Solid Earth, American Geophysical Union, Vol. 102, No. B10 (1997).
	C16	Price <i>et al.</i> , "Binding of Beryllium and Other Divalent Metal Ions," The Journal of Biological Chemistry, Vol. 258, No. 18, 9/25/83, pgs.10873-10880.
	C17	Stefanini <i>et al.</i> , "On the Mechanism of Horse Spleen Apoferritin Assembly: A Sedimentation Velocity and Circular Dichroism Study," Biochemistry, Vol. 26, No. 7, 4/7/87, pgs. 1831-1837.
	C18	Treffry <i>et al.</i> , "Spectroscopic Studies on the Binding of Iron, Terbium, and Zinc by Apoferritin," Journal of Inorganic Biochemistry, Vol. 21, No. 1 (1984), pgs. 9-20.
	C19	Wardeska <i>et al.</i> , "Metal Ion Complexes of Apoferritin," The Journal of Biological Chemistry, Vol. 261, No. 15, 5/25/86, pgs. 6677-6683.
	C20	Warne <i>et al.</i> , "Self Assembled Nanoparticulate Co : Pt for Data Storage Applications", IEEE Transactions on Magnetics, Vol. 36, No. 5, September 2000.

<b>EXAMINER</b>	<b>DATE CONSIDERED</b>
-----------------	------------------------

<b>FORM PTO - 1449</b>  <b>INFORMATION DISCLOSURE STATEMENT</b>		ATTORNEY DOCKET NO.: NNM-001C2  APPLICANTS: Mayes <i>et al.</i>  SERIAL NO.: Not yet assigned  FILING DATE: Herewith
	C21	Xu <i>et al.</i> "Collapse of Apo- and Magnetoferritins at the Air-Water Interface," J Colloid Interface Sci, vol. 167, No. 2, pgs. 314-319 (1994).
	C22	Yamashita, "Fabrication of a Two-Dimensional Array of Nano-Particles Using Ferritin Molecule", Thin Solid Films, 393, pp. 12-18, 2001.
	C23	Yau <i>et al.</i> , "Scanning Tunneling Microscopy of Ferritin Nanostructures", Modern Physics Letters B, Vol. 9, Nos. 3 & 4 (1995) pp-187-193.

3016989

EXAMINER	DATE CONSIDERED
----------	-----------------